

Interim
Foot-and-Mouth Disease Prevention Plan
National Park Service

Prepared
together
by:

The National Park Service
Biological Resource
Management Division

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National Incident
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Executive Summary

What is the danger of foot-and-mouth?

Foot-and-mouth disease (FMD) is a highly contagious disease of cloven-hoofed domestic animals that can infect wildlife species and can be carried by humans.

Foot-and-mouth disease primarily affects the productivity of livestock. The economic consequences of losing disease-free status and the measures taken to regain it are substantial.

The effects of FMD on cloven-hoofed wildlife are highly variable and not well tested on North American species. Measures taken to control FMD pose a potential threat to wildlife in national parks and to the economies of communities near them.

What is in this Prevention Plan?

This Interim Prevention Plan recommends actions to be taken at the regional and park level. The Plan addresses two different circumstances. First, if the disease remains outside North America, the primary goal is to prepare each park without great cost. Second, if FMD is confirmed in North America but is not near your national park, the goals are to provide information, increase coordination between agencies, and prevent overreaction.

What to do if North America remains foot-and-mouth disease-free.

Preparedness is the best chance to prevent the potential rapid spread of the disease. An FMD coordinator should be designated for each park and region. This person must know about the disease and how it could affect resources particular to their area.

Communication with other agencies and entities is key. The FMD coordinators should develop a park-specific list of appropriate local contacts. Information should be provided to all employees, especially those planning travel to countries where FMD is present.

This plan will help each FMD coordinator assess the potential of the disease to affect resources and human activities in their park unit.

What to do if foot-and-mouth disease occurs in North America.

The FMD coordinator and park management should re-evaluate the factors that determine the park's susceptibility considering the circumstances specific to the North American outbreak.

If FMD is diagnosed in North America, information should be provided to employees and the public on FMD and how it is being monitored at the regional and park level.

A decision key is provided to determine when it is appropriate to institute the Response Plan that outlines actions to be taken if an FMD outbreak occurs in or near a National Park System unit.

Introduction

BACKGROUND

Historical and Scientific Information

Foot-and-mouth disease (FMD) is a highly contagious viral disease of domestic cloven-hoofed animals. It may also affect wildlife species including deer, elk, moose, caribou, bighorn sheep, mountain goats, bison, pronghorn antelope, javelina, and feral pigs. Infection causes blisters on the mouth and feet of susceptible animals. The FMD virus is spread by direct contact, and by indirect contact with contaminated items. The virus is hardy and survives best in a cool, damp environment.

Foot-and-mouth disease is not native to or currently present in North America. The outbreak of FMD in Europe and other parts of the world has heightened concern in the United States. Although FMD is not usually lethal in animals and does not usually affect humans, the disease is of concern because of its potential for economic impact.

If FMD was identified in livestock in the United States, regulatory agencies would likely respond with immediate slaughter of infected animals and other animals in contact with them. During the first two months of the outbreak in the United Kingdom the number of confirmed cases increased from 1 to 1400. More than 2,000,000 domestic animals were destroyed to prevent the spread of disease.

The impacts of FMD on wildlife would likely be both direct and indirect. While FMD may cause some direct mortality to wildlife, the greatest impact may be actions taken on wildlife to protect livestock. During the last U.S. outbreak of FMD in the 1920s, approximately 22,000 deer were killed in California as part of the plan to eradicate the disease in livestock.

National Park Service Management Considerations

Park managers have an opportunity to consider potential disease response actions before an outbreak occurs in North America. This plan considers the following:

- Potential impairment of park resources, including actions recommended for disease control.
- Viable populations of wildlife and plants in parks, in accordance with each park's purpose and significance.
- Visitor experiences in parks, in accordance with each park's purpose and significance.
- Economic loss to communities and the private sector from either animal destruction or travel restrictions.

PURPOSE OF THIS PLAN

The primary purpose of this plan is to identify FMD prevention measures and to provide guidance and recommendations for their implementation. Most of the prevention responsibilities of the Federal government rest with United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS). However, the National Park Service (NPS) can take some preventative measures.

Relationship with Policy and Compliance

This plan is not intended to establish or modify NPS or individual park policy. *The applicability of legal constraints and obligations, policy requirements, applicable definitions (such as impairment) and strategic management goals must be considered when planning actions.*

Operational personnel and scientists reviewed this plan. However, in order to have guidance available before a critical situation arises, this plan has been prepared quickly, without the normal full review. These plans should be considered "highly recommended advice" to parks and are entitled "interim" documents. If concern over FMD continues for more than twelve months, the Biological Resource Management Division (BRMD) will consider a full review of the Plan and prepare any needed compliance.

Recommended Actions

Actions to take now when North America is disease-free

STEP 1: Designate regional and park foot-and-mouth disease coordinators.

Because of the potential rapid spread of FMD, each park should have a coordinator who knows about the disease and how it could affect resources in the park. A single FMD coordinator could serve several NPS units.

The regions should designate a regional FMD coordinator. The regional FMD coordinator should have a list of all park FMD coordinators as well as APHIS contacts for the region.

STEP 2: Establish contact with cooperating agencies.

It is suggested that initial contacts be made immediately in order to establish lines of communication and coordination. Follow-up communication should be made periodically, particularly if there is a change in the current FMD-free status of North America. Examples of topics for discussion are included in Table 1 (page 7). Contacts for state wildlife agencies (Appendix 1), State Veterinarians (Appendix 2), and Area Veterinarians In Charge (AVIC) (Appendix 3) are included.

STEP 3: Provide basic information to employees and have information available for the public.

General background information should be provided to all employees so that they are aware of the disease and its potential threat to park resources. They should also be made aware that the NPS has a prevention plan and a response plan in place should an outbreak of FMD occur in North America.

A template of sample information that could be provided to employees and visitors who inquire about the disease is in Appendix 4. Employees planning to travel to countries where FMD is present or who will be hosting VIPs, visiting researchers, etc. from the same countries should be provided more specific information on preventive measures, which is included in Appendix 5.

Methods of distribution can include email, hard copies posted on bulletin boards and sent to individual mailboxes, and all-employee meetings. A handout could be prepared so that it would be made available if members of the public inquire about the disease. Detailed information on FMD is currently posted at www.nature.nps.gov/intranet/fmd and will be updated as additional information becomes available.

Table 1. Coordination and communication with other agencies and entities

Agency	Discussion topics
Other NPS units	<ul style="list-style-type: none">• Share information and concerns.• Share expertise (e.g., the park FMD coordinator).• Coordinate communication with states and other agencies.
State division of wildlife	<ul style="list-style-type: none">• Discuss available baseline information (e.g., movement patterns of susceptible species or known interactions with livestock).• Identify major issues and concerns.• Share NPS mission and NPS Interim Foot-and-Mouth Disease Prevention Plan.• Ask how their agency would propose to deal with wildlife concerns, particularly potential depopulation of wildlife.
State veterinarian's office and USDA APHIS - Area Veterinarian-in-Charge (AVIC)	<ul style="list-style-type: none">• Reiterate that the NPS is concerned about the potential impact of FMD on park resources and has concerns about management requirements if the disease occurs in the U.S.• Share NPS mission and willingness to cooperate.• Share NPS Interim Foot-and-Mouth Disease Prevention and Response Plans.• Ask them to keep the NPS informed as appropriate. One important point is to ask that the park be contacted if a suspect case (and certainly a presumptive positive or confirmed positive case) is reported in or near an NPS unit.
Entities with shared boundaries: other federal agencies, state parks, tribes, and counties.	<ul style="list-style-type: none">• Discuss available baseline information (e.g., movement patterns of susceptible species or known interactions with livestock).• Identify major issues and concerns.• Share NPS mission and willingness to cooperate.• Share NPS Interim Foot-and-Mouth Disease Prevention and Response Plans.• Ask how they would deal with wildlife concerns related to FMD.• Ask them to keep the NPS informed as appropriate. Ask them if they will contact the park if they have a suspect case (and certainly a presumptive positive or confirmed positive case).
Livestock operators in or near the park.	<ul style="list-style-type: none">• Reiterate that the NPS is concerned about the potential impact of FMD on park resources and has concerns about management requirements if the disease occurs in the U.S.• Ask if they are aware of how to monitor for FMD and who to contact if they have concerns (their private veterinary practitioner would be a good place to start).• Inform them that if FMD were identified in the area there may be some impact on grazing of livestock in the park.

STEP 4: Evaluate the potential for the disease to affect park resources and visitors.

Each park FMD coordinator should evaluate resources that may be affected. An assessment would consider factors that determine the susceptibility of the NPS unit to an FMD outbreak. These factors include, but are not limited to, livestock, wildlife, feral animals, geographic, and human factors. Some factors to consider in the assessment are included in Table 2.

For additional details regarding factors to consider, see the FMD Situation Analysis Form (Appendix 6). The NPS lacks service-wide data regarding livestock use and presence in parks. To evaluate the livestock-wildlife interactions in the park, it would be valuable if FMD coordinator would complete the attached survey of domestic animals (Appendix 7: Livestock Survey). This survey is optional.

Table 2. Examples of factors to consider in a foot-and-mouth disease assessment.

Resource or activity	Comments
Native cloven hoofed ungulates	Includes species such as bison, moose elk, deer, bighorn sheep, pronghorn, and mountain goats, and javelina.
Livestock – FMD susceptible	Pigs, cattle, sheep, goats, llamas
Livestock – FMD transmitters	Horses, mules, burros
Other wildlife	Scavengers, birds, predators, non-native species and feral animals
Employee information and training	See Step 3 and Step 6
Agency sponsored foreign visitor or employee travel to or from foreign countries	See Step 3 and Step 6
Visitors	See Step 3 and Step 6, Information, public contact with animals, foreign travel
Park Operational Activities	Enforcement, education, maintenance, resource operations, public information office
Concession Operations	Horseback riding, animal packing operations.
Cultural Artifacts, Sites, Activities	May involve ground disturbance
Recreational Activities	Hiking, trails, roads.
Points of contact with responsible agencies or individuals	List of names and numbers
Researchers and research projects.	See Step 3 and Step 6, Information, public contact with animals, foreign travel

Additional actions to take if an outbreak of the disease occurs in North America

STEP 5: Assess the local circumstances in coordination with cooperating agencies.

Park managers or the FMD coordinator should contact the appropriate cooperating agencies and re-evaluate their particular situation.

Subsequent steps in the Prevention Plan and action items in the Response Plan potentially require increased employee involvement, increased interagency and public communication, and increased visitor management.

Additional agencies and entities that have interaction or common borders with a park could also be contacted to confirm that they are aware of the disease threat and what they can do. These contacts will vary based on park location and operations. Additional contacts are summarized in Table 3.

Table 3. Additional user group contacts.

User group	Discussion topics
Livestock (food animal) interests: <ul style="list-style-type: none">• Grazing operators in the park• Pasture permittees in the park• Grazing operators surrounding the park• Operators of pastoral scenes• Other federal agencies with livestock grazing responsibilities	Be sure that they are aware of the disease and the potential threat to park resources. Assure that they deal with their private veterinary practitioner for animal health issues and permitting for animal movement (as appropriate). Ask that they do what they can to minimize trespass animals. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would likely be some impacts on livestock use in the park.
Pack animal interests: <ul style="list-style-type: none">• Operators that use equids (horses, mules, burro) for transportation in the park• Operators that use pack animals (e.g., equids or llamas)	Although equids are resistant to FMD, they can transmit the disease in much the same way as humans. Of particular concern is if equids are with infected livestock they could transmit the virus in organic material on their body and hooves. Llamas could become infected and transmit the virus to other susceptible animals. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would likely be some impacts on livestock use in the park.
Human-use interests: <ul style="list-style-type: none">• Operators of tour groups• Researchers• Gateway communities• Chamber of commerce	Assure that operators are aware of FMD and its potential threat to park resources. Assure that they are following appropriate methods to prevent introduction of FMD from infected areas into the park. Inform them that if the area were classified as a surveillance or infected zone by USDA APHIS there would

	likely be some impacts on park use.
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STEP 6: Working with cooperating agencies, provide information to employees and the public.
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Provide updated information to employees and the public on what is being done at the park or on a regional level to respond to the threat of FMD if it should occur in that area, and what they can do to help protect the parks.

Many methods can be used to communicate information about FMD and preventing its spread. Target audiences include park staff, concessioners, park partners, business permit holders, inholders, neighboring agencies, news media and local communities. These methods include electronic mail, all-employee and community meetings, postings on bulletin boards, hard copy mailings, personal contact, faxes and a web site.

Information on FMD should be provided to visitors in the form of handouts or brochures as they enter a park, at park visitor centers and through interpretive programs. The use of other methods such as signage at entrances or the Travel Information System (TIS) should be considered. Appendix 4 provides information that could be used as a basis for a handout, press release and public service announcements.

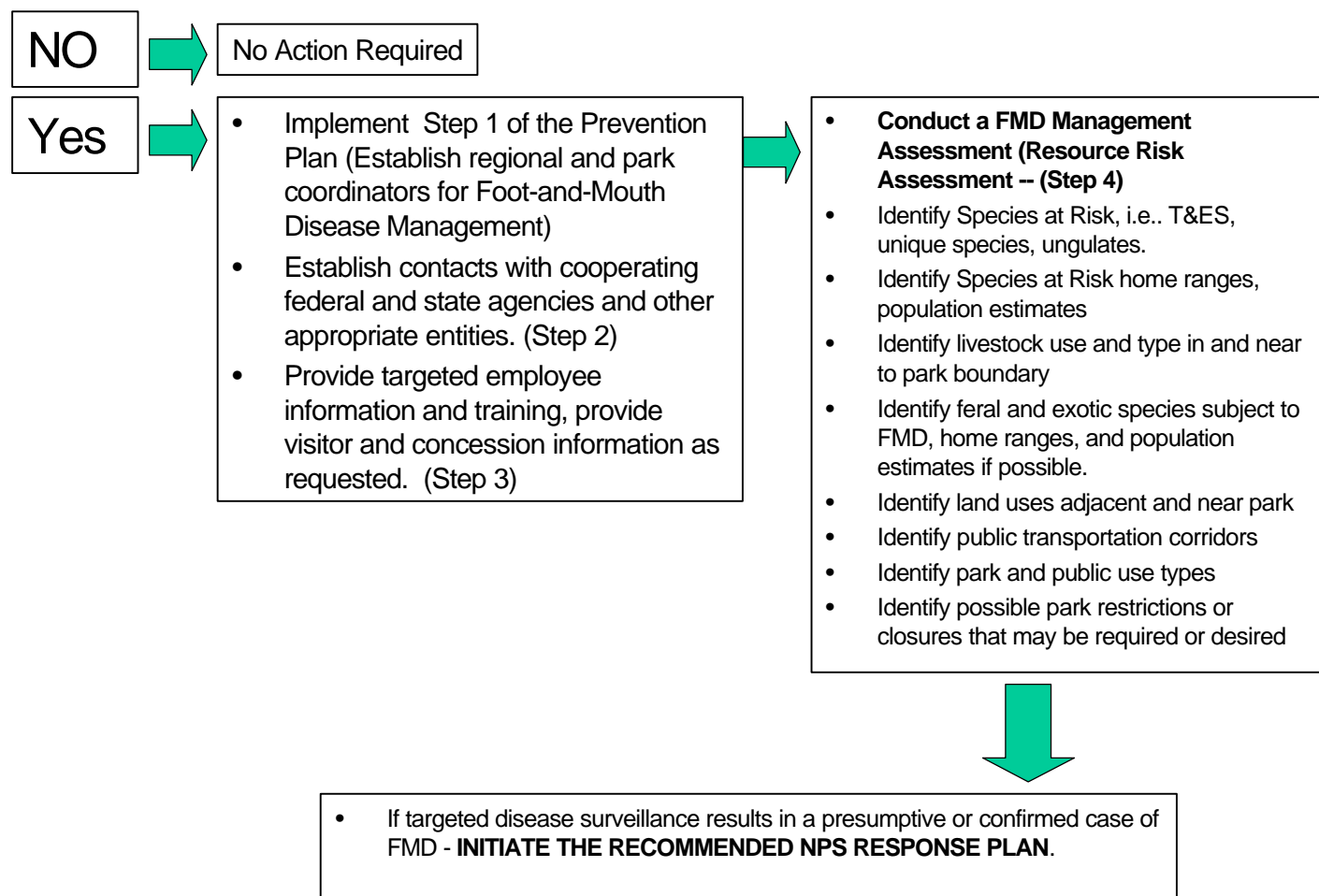
Additional information and training should be provided to specific field personnel to identify clinical signs of FMD (see Appendix 8– Identifying foot-and-mouth disease).

When To Move To The Response Plan

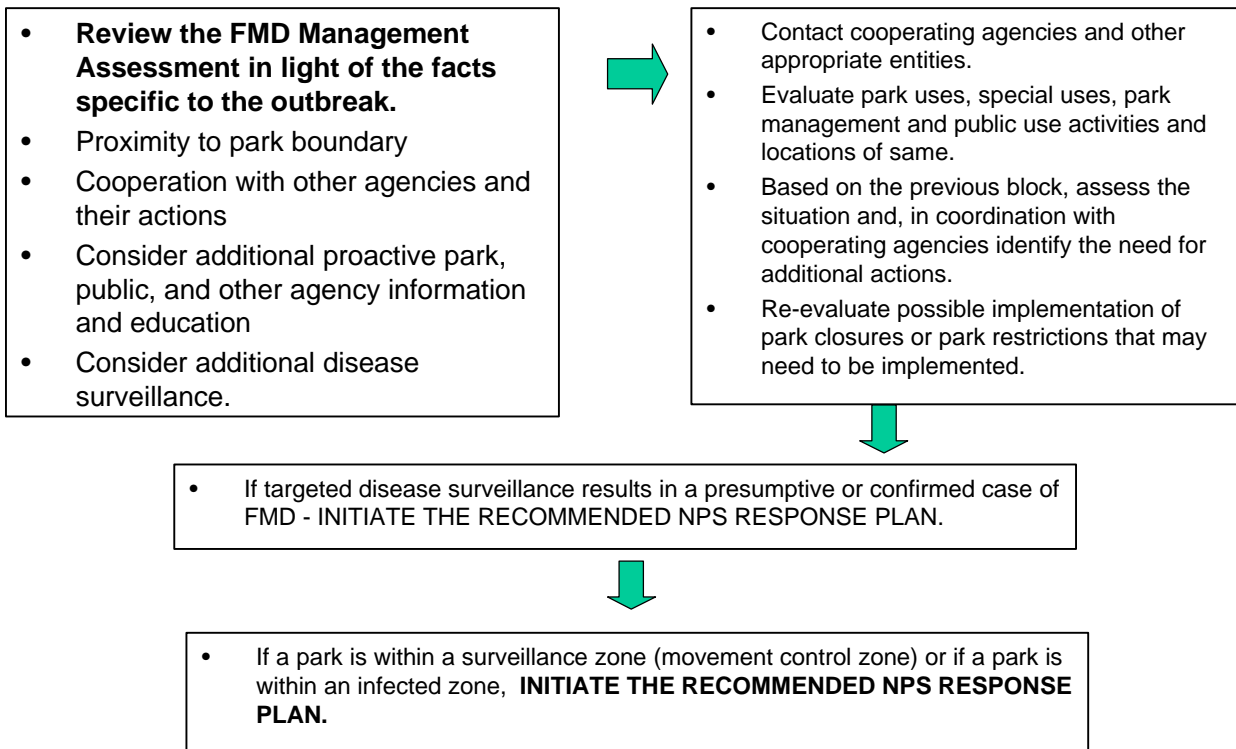
DECISION KEY (Recommend actions for consideration) for Prevention Plan

- This decision key has been developed to assist or provide guidance to managers in determining when or whether to move from the foot-and-mouth prevention planning stage to the foot-and-mouth response stage. The process starts with a prevention plan (a limited measured response designed to provide park managers with the necessary information to identify and implement appropriate management actions and concerns
- Park Managers should be advised that should a presumptive or confirmed case of FMD be identified in or adjacent to the United States that the USDA, Animal and Plant Health Inspection Service (APHIS) may create (establish) Movement Control Zones and Infected Zones which may include units of the National Park Service. Should such movement or infected zones be established by APHIS, NPS units may be required to go directly to implementing all or portions of the NPS Response Plan. In order to establish and maintain a measured response, communications between NPS and cooperators is essential.

A foot-and-mouth health alert recognizes that there is an **increased risk** of FMD entering the North American continent, Hawaii, and U.S. Territories through livestock, wildlife, humans, mechanical or other means.



Foot-and-Mouth Disease is **presumptive**, or **confirmed** to be present in the North American continent, Hawaii, or U.S. Territories. (Step 5)



APPENDIX 1 – State and Province Fish and Wildlife Agencies

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Waterbury VT 05671-0501 Phone: (802) 241-3730
Fax: (802) 241-3295
Phone: (802) 241-3730
Fax: (802) 241-3295

❖ **VIRGIN ISLANDS**

Dr. Barbara Kojis, Director
Division of Fish and Wildlife
Department of Planning & Natural Resources
6291 Estate Nazareth 101
St. Thomas USVI 00802
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Fax: (340) 775-3972

❖ **VIRGINIA**

Mr. William L. Woodfin, Jr., Director
Virginia Department of Game &
Inland Fisheries
4010 W. Broad Street, Box 11104
Richmond VA 23230
Phone: (804) 367-9231
Fax: (804) 367-0405

❖ **WASHINGTON**

Mr. Jeff Koenings, Director
Washington Dept of Fish and Wildlife
600 Capitol Way North
Olympia WA 98501-1091
Phone: (360) 902-2225
Fax: (360) 902-2947

❖ **WEST VIRGINIA**

Mr. Bernard Dowler, Chief
Wildlife Resources Section
West Virginia Div. Of Natural Resources
1900 Kanawha Boulevard, East
Charleston WV 25305
Phone: (304) 558-2771
Fax: (304) 558-3147

❖ **WISCONSIN**

Mr. George Meyer
Special Assistant to Secretary
Wisconsin Department of Natural Resources
Box 7921
Madison WI 53707-7921
Phone: (608) 266-2121
Fax: (608) 266-6983

❖ **WYOMING**

Mr. John Baughman, Director
Wyoming Game & Fish Department
5400 Bishop Boulevard
Cheyenne WY 82006
Phone: (307) 777-4600
Fax: (307) 777-4610

❖ **GUAM**

Mr. Robert Anderson, Chief
Aquatic & Wildlife Resources
Department of Agriculture
192 Dairy Road
Mangilao GUAM 96923
Phone: (671) 734-3944
Fax: (671) 734-6599

❖ **SAIPAN**

Dr. Joaquin A. Tenorio, Secretary
Dept. of Lands and Natural Resources
P.O. Box 10007
Saipan MP 96950
Phone: (670) 322-9834
Fax: (670) 322-2633

❖ **AMERICAN SAMOA**

Mr. Philip Langford
Marine & Wildlife Resources Department
American Samoa Government
P.O. Box 3730
Pago Pago AS 96799
Phone: (684) 633-4456
Fax: (684) 633-5944

❖ **ALBERTA**

Mr. Ken Ambrock, Director
Fish and Wildlife Management Division
Natural Resources Service, Alberta Environment
Main Floor, South Petroleum Plaza
9915 - 108 Street
Edmonton ALB T5K 2G8 CANADA
Phone: (780) 427-3809
Fax: (780) 422-9557

❖ **BRITISH COLUMBIA**

Mr. Doug Dryden, Director
Wildlife Branch
Ministry of Environment
Parliament Building, 780 Blanshard Street
Victoria, BC V8V 1X5 CANADA
Phone: (250) 387-9731
Fax: (250) 356-9145
Mr. Jamie Alley, Director
Recreational Fisheries Branch
Ministry of Environment
Parliament Building, 780 Blanshard Street
Victoria, B.C. V8V 1X5 CANADA
Phone: (250) 387-9711
Fax: (250) 387-6750

❖ **MANITOBA**

Mr. Brian Gillespie, Director
Wildlife Branch
Manitoba Department of Natural Resources
Box 24, 200 Saulteaux Crescent
Winnipeg MAN R3J 3W3 CANADA
Phone: (204) 945-7761
Fax: (204) 945-3077

❖ **NEW BRUNSWICK**

Dr. Arnold Boer, Executive Director
Fish & Wildlife Branch
Department of Natural Resources & Energy
P.O. Box 6000
Fredericton, NB E3B 5H1 CANADA
Phone: (506) 453-2433
Fax: (506) 453-6699

❖ **NOVA SCOTIA**

Mr. Barry Sabeen Director of Wildlife
Department of Natural Resources
136 Exhibition Street
Kentville, NS B4N 4E5 CANADA
Phone: (902) 679-6091
Fax: (902) 679-6176

❖ **NORTHWEST TERRITORIES**

Mr. Doug Stewart
Director, Wildlife Management Division
Government of Northwest Territories
Department of Renewable Resources
Scotia Centre, 5th Floor #600
5102 50th Avenue
Yellowknife, NWT X1A 3S8 CANADA
Phone: (867) 873-7411
Fax: (867) 873-0293

❖ **ONTARIO**

Mr. Cameron Mack, Director
Fish and Wildlife Branch
Ontario Ministry of Natural Resources
300 Water Street, 5th Floor
P.O. Box 7000
Peterborough, ONT K9J 8M5 CANADA
Phone: (705) 755-1909
Fax: (705) 755-1900

❖ **QUEBEC**

René Lesage
Director of Wildlife
Ministry of Recreation, Fish & Game
150 Boulevard St-Cyrille East, 17th Fl.
Quebec City, QU G1R 4Y1 CANADA
Phone: (418) 644-2823
Fax: (418) 646-6863

❖ **SASKATCHEWAN**

Mr. Dennis Sherratt, Director
Wildlife Branch
Saskatchewan Natural Resources
3211 Albert Street
Regina, SASK S4S 5W6 CANADA
Phone: (306) 787-2314
Fax: (306) 787-9544

APPENDIX 2 - Contact Information for State Veterinarians

State	State Vet	Phone	Fax
Alabama	Dr. Tony Frazier Acting Director	(334) 240-7255	(334) 223-7352
Alaska	Dr. Bert A. Gore	(907) 745-3236	(907) 745-8125
Arizona	Dr. Richard Willer	(602) 542-4293	(602) 542-4290
Arkansas	Dr. Conley Byrd	(501) 907-2400	(501) 907-2425
California	Dr. R.E. Breitmeyer	(916) 654-0881	(916) 653-2215
Colorado	Dr. Wayne Cunningham	(303) 239-4161	(303) 239-4164
Connecticut	Dr. Mary Jane Lis	(860) 713-2504	(860) 713-2515
Delaware	Dr. H.W. Towers, Jr.	(302) 739-4811	(302) 697-6287
Florida	Dr. Leroy Coffman	(850) 410-0900	(850) 410-0915
Georgia	Dr. Lee Myers	(404) 656-3671	(404) 657-1357
Hawaii	Dr. James Foppoli	(808) 483-7100	(808) 483-7110
Idaho	Dr. Bob Hillman	(208) 332-8540	(208) 334-4062
Illinois	Dr. R.D. Hull	(217) 782-4944	(404) 524-7702
Indiana	Dr. Bret D. Marsh	(317) 227-0300	(317) 227-0330
Iowa	Dr. John Schiltz	(515) 281-5306	(515) 281-6236
Kansas	Mr. George Teagarden Livestock commissioner	(785) 296-2326	(785) 296-1765
Kentucky	Dr. D.L. Notter	(502) 564-3956	(502) 564-7852
Louisiana	Dr. Maxwell Lea, Jr.	(225) 925-3980	(225) 925-6012
Maine	Dr. Chip Ridky	(207) 287-3701	(207) 287-7548
Maryland	Dr. Roger Olson	(410) 841-5810	(410) 841-5999
Massachusetts	Dr. Lorraine O'Connor	(617) 626-1791	(617) 626-1850
Michigan	Dr. Harry M. Chaddock (vet until Aug.)	(517) 373-1077	(517) 373-6015
Minnesota	Dr. Thomas J. Hagerty (until August)	(651) 296-2942	(651) 296-7417
Mississippi	Dr. James Watson	(601) 359-1170	(601) 359-1177
Missouri	Dr. John W. Hunt, Jr.	(573) 751-3377	(573) 751-6919
Montana	Dr. Arnold A. Gertonson	(406) 444-2043	(406) 444-1929
Nebraska	Dr. Larry Williams	(402) 471-2351	(402) 471-3252
Nevada	Dr. David Thain	(775) 688-1180	(775) 688-1178

New Hampshire	Dr. C.W. McGinnis	(603) 271-2404	(603) 271-1109
New Jersey	Dr. Ernest Zirkle	(609) 292-3965	(609) 777-8395
New Mexico	Dr. Steven England	(505) 841-6161	(505) 841-6160
New York	Dr. John P. Huntley	(518) 457-3502	(518) 485-7773
North Carolina	Dr. David Marshall	(919) 733-7601	(919) 733-6431
North Dakota	Dr. Larry Schuler	(701) 328-2655	(701) 328-4567
Ohio	Dr. R. David Glauer	(614) 728-6220	(614) 728-6310
Oklahoma	Dr. Burke Healey	(405) 521-3891	(405) 522-0756
Oregon	Dr. Andrew Clark	(503) 986-4679	(503) 986-4734
Pennsylvania	Dr. John I. Enck, Jr.	(717) 772-2852	(717) 787-1868
Rhode Island	Contact Division Chief	(401) 222-2781	(401) 222-6047
South Carolina	Dr. Jones W. Bryan	(803) 788-2260	(803) 788-8058
South Dakota	Dr. Sam Holland	(605) 773-3321	(605) 773-5459
Tennessee	Dr. Ronald Wilson	(615) 837-5120	(615) 837-5335
Texas	Dr. Linda Logan	(512) 719-0777	(512) 719-0719
Utah	Dr. Michael Marshall	(801) 538-7160	(801) 538-7169
Vermont	Dr. Todd Johnson	(802) 828-2421	(802) 828-2361
Virginia	Dr. Wm. M. Sims, Jr.	(804) 786-2481	(804) 371-2380
Washington	Dr. Robert Mead	(360) 902-1878	(360) 902-2087
West Virginia	Dr. Lewis Thomas	(304) 558-3214	(304) 348-2203
Wisconsin	Dr. Clarence Siroky	(608) 224-4872	(608) 224-4871
Wyoming	Dr. Jim Logan	(307) 777-7515	(307) 777-6561

APPENDIX 3 – Contact List for Area Veterinarians-in-Charge

STATE	AVIC	Phone Number
Alabama	Dr. O.W. Hester	(334) 223-7141
Alaska/Hawaii/Washington	Dr. Gary L. Brickler	(360) 753-9430
Arizona	Dr. Hortentia Harris	(480) 491-1002
Arkansas	Dr. Robert B. Sanders	(501) 224-9515
California/Nevada	Dr. Paul Ugstad	(916) 857-6170
Colorado	Dr. Jerry D. Diemer	(303) 231-5385
Florida	Dr. U.J. Lane	(352) 333-3120
Georgia	Dr. Edgardo Arza	(770) 922-7860
Idaho	Dr. Cynthia Gaborick	(208) 378-5631
Illinois`	vacant	(217) 241-6689
Indiana	Dr. Francisco Collazo-Mattei	(317) 290-3300
Iowa	Dr. Kevin L. Petersburg	(515) 284-4140
Kansas	Dr. Kevin P. Varner	(785) 235-2365
Kentucky	Dr. Roger J. Odenweller	(502) 227-9651
Louisiana	vacant	(225) 389-0436
Maryland (DE, DC)	Dr. David Vogt	(410) 349-9708
Massachusetts (CT, ME, NH, RI, VT)	Dr. Robert Brady Dr. Wm. Smith	(508) 865-1421
Michigan	Dr. Reed Macarty	(517) 324-5290
Minnesota	vacant	(651) 290-3691
Mississippi	Dr. Deborah Brennan	(601) 965-4307
Missouri	Dr. Robert L. Fischer	(573) 636-3116
Montana	Dr. Wilbur Clark	(406) 449-5407
Nebraska	Dr. Kathleen Akin	(402) 434-2300
New Jersey	Dr. Roxanne C. Mullaney	(609) 259-8387
New Mexico	Dr. Mike Greenlee	(505) 761-3160
New York	Dr. Kay W. Wheeler	(518) 453-0187
North Carolina	Dr. Terry Clark	(919) 513-4170
North Dakota	Dr. Larry A. White	(701) 250-4210
Ohio	Dr. Arnaldo Vaquer	(614) 469-5602
Oklahoma	Dr. Brian H. Espe	(405) 427-9413
Oregon	Dr. Don Herriott	(503) 399-5871
Pennsylvania	Dr. Lynne Siegfried	(717) 782-3442
Puerto Rico	Dr. Joel Goldman	(787) 766-6050
Rhode Island	Not Hired yet	
South Carolina	Dr. Deloris Lenard	(803) 788-1919
South Dakota	Dr. Larry A. White	(605)224-6186
Tennessee	Dr. Robert E. Southall	(615) 781-5310
Texas	Dr. Richard A. Ferris	(512) 916-5551
Utah	Dr. Robert DeCarolis	(801) 524-5010
Virginia	Dr. Terry Taylor	(804) 771-2774

Washington	Dr. Gary L. Brickler	(360) 753-9430
West Virginia	Dr. Arnaldo Vaquer	(614) 469-5602
Wisconsin	Dr. Jack Shere	(608) 270-4000
Wyoming	Dr. Bret Combs	(307) 772-2186

APPENDIX 4 –FMD Information for Park Employees and Visitors

Note: Material in **bold** should be substituted for material in parentheses if FMD is present in North America.

Foot-and-mouth disease (FMD) is a highly contagious disease that affects domestic cattle, sheep, pigs and other cloven-hoofed animals, including elk, bighorn sheep, mountain goats, bison, deer, caribou, moose, javelina and feral pigs. (FMD has not yet been found in North America or its territories, and strict measures are being taken to keep it out of the country.) **FMD has recently been discovered in (specific places in North America or its territories), and measures are being taken to contain it in order to prevent the outbreak from spreading.**

The disease is spread through direct or indirect contact with infected animals. While it is not considered a threat to humans, it can be spread unknowingly to susceptible animals by people whose clothing, footwear, personal items or body have been contaminated with the virus. The virus is hearty and can survive for extended periods in a hospitable environment, especially in organic material. The virus has survived for 91 hours on the feathers of live birds and can be transported in the nose and throat of humans for about two days.

(If FMD is introduced on this continent, the effects on livestock and wildlife could be devastating.) **The effects on livestock and wildlife could be devastating if efforts to contain the disease are unsuccessful.** Extreme measures, including the destruction of many animals, have been taken in other areas of the world in order to control an outbreak. The National Park Service, in cooperation with other agencies, has developed a prevention plan and a response plan to assist park managers if an outbreak of FMD occurs in or near a park unit. **Actions that might be required to halt the spread of FMD in order to protect park wildlife resources could include restrictions on park use and entry.**

Visitors can help ensure the safety and health of the National Park System's wildlife resources by avoiding direct contact with park animals. It is particularly important to not approach species most susceptible to the disease. Individuals who have recently been in countries affected by FMD should avoid contact with livestock and wildlife for five days after arrival in the United States, launder or dry clean all clothing and disinfect shoes and soiled personal items with a dilute bleach solution.

More detailed information is available at **park visitor centers or at** www.nature.nps.gov/intranet/fmd and will be posted on the Internet at www.nps.gov/ a later date.

APPENDIX 5 – Advice for International Travelers

If international travel is planned, or if hosting volunteers, researchers or other park staff from FMD-affected areas, the following precautions should be taken to help protect park resources. Check with the NPS Office of International Affairs or the Biological Resource Management Division in Fort Collins, CO if more information is needed.

USDA Animal and Plant Health Inspection Service (APHIS) inspectors check travelers upon arrival in the United States as the first safeguard; however, some added precautions may be indicated because of the close association that staff, volunteers or other collaborators may have with wildlife and wildlife habitat in the parks. APHIS recommends the following preventive measures be taken while in an FMD affected country or upon return from an affected country:

- Avoid farms, livestock sale barns, stockyards, animal laboratories, meat-packing houses, zoos, fairs, or other animal facilities for 5 days prior to return to the United States. The NPS advises staff, volunteers and collaborators to also avoid wildlife and wildlife habitat in FMD affected regions.
- Before travel to the United States, launder or dry clean all clothing and outerwear. Clean shoes and disinfect with a dilute bleach solution. Disinfect all soiled personal items by wiping with a dilute bleach solution.
- Avoid contact with livestock or wildlife for 5 days after arrival in the United States. Office duties should be scheduled for the first 5 days in the United States. The NPS advises that this period be extended to 10 days if travelers have visited the animal facilities listed above within 5 days prior to travel to the United States.

Countries designated free of foot-and-mouth disease as of April 24, 2001

Australia	Germany	New Zealand
Austria	Greece	Norway
Belgium	Haiti	Panama
Bulgaria	Honduras	Poland
Canada	Hungary	Portugal
Chile	Iceland	Romania
Costa Rica	Indonesia	Singapore
Croatia	Italy	Slovakia
Cuba	Japan	Slovenia
Cyprus	Latvia	Spain
Czech Rep.	Lithuania	Sweden
Denmark	Luxembourg	Switzerland
El Salvador	Madagascar	Ukraine
Estonia	Malta	United States of America
Finland	Mexico	Vanuatu
Macedonia	New Caledonia	

APPENDIX 6

FOOT-AND-MOUTH DISEASE SITUATION ANALYSIS	Park Name:	Prepared by (Name and Title):	Date and Time Prepared
--	------------	-------------------------------	------------------------

Geographic Factors	
Describe the location of the source (attach map)	Give GPS or other coordinates
Describe the Disease Surveillance or Movement Control Zone (attach map)	Describe the Infected Zone (attach map)
List the facilities or transportation routes in the Disease Surveillance or Movement Control Zone:	List the facilities or transportation routes in the Infected Zone:
Describe the topography of the zones:	List accessibility problems:
Landownership Issues:	Land Use Issues:

Human Factors	
Describe known hazards or other safety considerations:	
Describe visitor and/or public uses that may be affected in or near a park:	
What restrictions are in place: <input type="checkbox"/> Area closures <input type="checkbox"/> Travel restrictions <input type="checkbox"/> Decontamination requirements	Details of restrictions:
Describe the actual or potential socio-economic effects:	
Describe the level of media attention and political interest:	Describe the likelihood of protest actions:

Resource Factors	
What is at risk (see Vulnerability Assessment): <input type="checkbox"/> Unique ungulate species <input type="checkbox"/> Other ungulates <input type="checkbox"/> T+E species <input type="checkbox"/> Unique plant communities <input type="checkbox"/> Livestock <input type="checkbox"/> Cultural resources <input type="checkbox"/> Feral populations <input type="checkbox"/> Other _____	Describe the risks (see Vulnerability Assessment in the FMD Prevention Plan):
Describe other natural resource issues or considerations:	
Describe other cultural resource issues or considerations:	

Incident Management Factors			
How many people are likely to be involved?	What size is the incident area?	Are air operations likely to be involved?	Are other incidents occurring in the area?
Describe potential safety considerations:			
Describe policy issues and considerations:			
Describe likely logistical problems:			
Describe the current and forecast weather and its projected effect on the situation:			
What is the availability of resources? <input type="checkbox"/> Good <input type="checkbox"/> Fair – other incidents are occurring <input type="checkbox"/> Poor – competition for resources is strong	Summarize the overall situation in the country:		

APPENDIX 7: Livestock Survey

NATIONAL PARK SERVICE

LIVESTOCK SURVEY

DOES THE NATIONAL PARK SERVICE UNIT YOU WORK IN HAVE:

- LIVESTOCK OPERATIONS
- PATROL, TRAIL RIDES OR PACKSTOCK
- TRESPASS OF DOMESTIC ANIMALS
- FERAL OR AT-LARGE HORSES OR BURROS

IF YOU ANSWERED “YES” TO ANY OF THE ABOVE QUESTIONS,

Find the section that best relates to your park, complete the survey for your records, and send it to the Service-wide Grazing Coordinator and the Regional FMD Coordinator.

IF YOU ANSWERED “NO” TO ALL OF THE ABOVE QUESTIONS,

Please state this on the survey and send it to the Service-wide Grazing Coordinator and the Regional FMD Coordinator.

INTRODUCTION

The NPS needs this information in order to get concrete figures on the type and amount of grazing and livestock present in our national parks. It has been many years since a survey has been conducted, and a Service-wide survey has never been done, so your help is greatly appreciated. The figures you provide will be collated into a database to analyze the extent and kind of grazing and livestock use, respond to internal and external inquiries, prepare reports, identify common projects (i.e. fencing), and assess training needs. Please keep in mind we are not inquiring about wildlife grazing. While we acknowledge there is a relationship and wildlife must be a priority, our program area is domestic and feral livestock. We only want information about cattle, sheep, goats, horses, mules, burros, reindeer, llamas, etc.

The authority to allow grazing and livestock use is found in the Code of Federal Regulations (CFR):

National Park Service 36 CFR Sec.2.60. Livestock use and agriculture.

(a) The running-at-large, herding, driving across, allowing on, pasturing or grazing of livestock

of any kind in a park area or the use of a park area for agricultural purposes is prohibited,

except:

- (1) As specifically authorized by Federal statutory law; or
- (2) As required under a reservation of use rights arising from acquisition of a tract of land; or
- (3) As designated, when conducted as a necessary and integral part of a recreational activity or required in order to maintain a historic scene.

When grazing or livestock use is legislated, the wording may explicitly state that grazing is permitted, e.g. in western parks where open grazing was continued when the park was created from US Forest Service (USFS) or Bureau of Land Management lands (BLM). Otherwise it implies livestock use through comments about “agriculture” or “cultivation”, e.g. livestock used to maintain a historic scene.

In NPS, livestock operations are generally cattle and sheep in either open range or pasture situations with the notable exception of one park where reindeer are grazed. Historic scene can include farm animals or special breeds of livestock, like goats, sheep, cattle, and horses. Horses and mules are used for NPS patrol and commercial or private trail rides. Horses, mules, and sometimes burros and llamas are used for packstock. Trespass widely occurs on NPS land usually by cattle, horses, sheep or goats grazing on adjacent lands. Feral or at-large herds of horses and burros exist primarily because they were present with previous land ownership.

SURVEY SECTIONS

In an effort to quantify the variety of circumstances of grazing or livestock use in parks, the following survey has been arranged into these four categories.

Please only answer the survey categories that pertain to your park

(Please check)

Section A.	Livestock Operations	_____
Section B.	Patrol, Trail Rides or Packstock	_____
Section C.	Trespass	_____
Section D.	Feral or At-Large Herds of Horses or Burros	_____

Park: _____ Region: _____

Name, title, and phone number of park contact:

Last *First* *Title*

Phone number: () _____ ext: _____

Thank you for your participation. We would appreciate your sending the completed survey to us via mail or fax to:

Kathy M. Davis, Service-wide Grazing Coordinator

Natural Resources Division
National Park Service
Southern Arizona Office
3115 N. 3rd Avenue, Suite 101
Phoenix, Arizona 85012-4334

Kathy_M_Davis@nps.gov
Fax (602) 640-5265
Phone (602) 640-5250 ext 235

SECTION A: LIVESTOCK OPERATIONS

1. What is the type of livestock operation (check ALL that apply)?

- (1.1) Commercial profit for private enterprise: _____
 (1.2) Commercial profit for NPS: _____
 (1.3) Non profit for private entity: _____
 (1.4) Non profit for NPS: _____
 (1.4) Historic scene: _____
 (1.5) Stock trailing: _____
 (1.6) Other (describe): _____

2. If grazing or livestock use is legislated, cite the specific legislation, either the number of the 16 USC and/or public law.

3. Will grazing cease after a specified time period due to a sunset clause in law or reservation of use right? YES NO _____

(3.1) Or will grazing continue in perpetuity? YES NO _____

(3.2) Comments _____

4. What kind of and approximately how many animals are using park land (please indicate whether animals are present and give numbers and/or AUMs)?

	YES	NO	Number	AUMs
(4.1) Cattle:	_____	_____		
(4.2) Sheep:	_____	_____		
(4.3) Goats:	_____	_____		
(4.4) Horses:	_____	_____		
(4.5) Mules:	_____	_____		
(4.6) Burros:	_____	_____		
(4.7) Reindeer:	_____	_____		
			Number	AUM's
(4.8) Other:	_____	_____		
(4.9) Other:	_____	_____		

5. Are there special breeds that are integral to the park? If so what are they?

6. How much of the park is used for livestock operations:

(6.1) Number of permittees: _____

(6.2) Number of allotments: _____

(6.3) The total acreage used for livestock operation: _____

(6.4) The total acreage of the park: _____

7. Provide a brief description of the grazing operation, season of use, etc. (for example, year-long grazing for cow/calf operation or stock trailing twice annually).

8. Allotment and/or pasture circumstances since the park was established.

(8.1) Has grazing been terminated on any of the allotments? YES _____ NO _____

(8.2) If **YES** who terminated the use and for what reasons? _____

(8.3) Has the allotment or pasture size been reduced? YES _____ NO _____

(8.4) If **YES** who reduced it and for what reasons?

(8.5) Has the allotment or pasture size been increased? YES _____ NO _____

(8.6) If **YES** who increased it and for what reason? _____

9. What permit system is used (check ALL that apply)?

(9.1) Special Use Permit: _____

(9.2) Incidental Business Permit: _____

(9.3) Lease: _____

(9.4) Memorandum of Agreement: _____

(9.5) Memorandum of Understanding: _____

(9.6) Interagency Agreement: _____

(9.7) Other: _____

10. What fees are charged and how are they determined?

(10.1) Are any of the fees kept by the park and used to manage grazing operations?

YES _____ NO _____

11. Is there an approved grazing or livestock management plan that includes specification for allotment or pasture management? YES _____ NO _____ IN PROGRESS _____

(11.1) If **YES** was environmental compliance done on the plan?

YES _____ NO _____ IN PROGRESS _____

(11.2) Comments:

12. Who manages the land use (NPS, BLM, USFS, concessionaire, permittee, tribe or other)? If another entity manages the use, what is the role of NPS?

13. Is there a program to monitor grazing or livestock impacts on resources?

YES _____ NO _____ IN PROGRESS _____

(13.1) If **YES**, briefly describe what is monitored (for example, production utilization, plant composition, plant density, condition assessment, etc.).

14. Any additional comments you would like to make that would be appropriate to this section?

SECTION B: PATROL, TRAIL RIDES OR PACKSTOCK

1. What is the type of livestock use (check ALL that apply)?

- (1.1) Front Country: _____
- (1.2) NPS Patrol: _____
- (1.3) NPS Backcountry: _____
- (1.4) NPS Packstock: _____
- (1.5) Concessionaire Trail-Rides: _____
- (1.6) Concession Packstock: _____
- (1.7) Visitor Livestock: _____
- (1.8) Other: _____

2. What kind of animals?

- (2.1) Horses: YES _____ NO _____
- (2.2) Mules: YES _____ NO _____
- (2.3) Burros : YES _____ NO _____
- (2.4) Llamas: YES _____ NO _____
- (2.5) Other: _____

3. Provide a **BRIEF** description of the operation, season of use, etc. (for example, NPS backcountry patrols throughout the year or concessionaire trail rides in the front country during summer).

4. How are the animals fed on overnight trips (check ALL that apply)?

- (4.1) Grazing: _____
- (4.2) Pellets: _____
- (4.3) Hay: _____
- (4.4) Weed free hay _____
- (4.5) Other: _____

(4.6) Comments: _____

5. Approximately how much use expressed in average number of trips per month and for how many months?

- (5.1) NPS: _____
- (5.2) Concessionaire: _____
- (5.3) Private: _____

6. When not in use is the livestock kept on NPS Property? YES _____ NO _____

(6.1) If **YES** where is the livestock kept? Corrals _____ Pastures _____

7. Approximately how many animals are located in the park (please indicated which animals are present and give the estimated number)?

			Number
(7.1) Horses:	YES _____	NO _____	
(7.2) Mules:	YES _____	NO _____	
(7.3) Llamas:	YES _____	NO _____	
(7.4) Other:	_____		
(7.5) Other:	_____		

8. What permit system is used (check **ALL** that apply)?

- (8.1) Special Use Permit: _____
(8.2) Wilderness or Backcountry Permit: _____
(8.3) Incidental Business Permit: _____
(8.4) Lease: _____
(8.5) Memorandum of Agreement: _____
(8.6) Memorandum of Understanding: _____
(8.7) Interagency Agreement: _____
(8.8) Other: _____

9. What fees are charged and how are they determined?

(9.1) Is any of the fee kept by the park and used to manage the grazing operation?

YES _____ NO _____

10. Is there an approved livestock, backcountry, wilderness or other management plan that includes specifications for stock use? YES _____ NO _____ IN PROGRESS _____

(10.1) If **YES** was environmental compliance done on the plan?

YES _____ NO _____ IN PROGRESS _____

11. Is there a program to monitor grazing or livestock impacts on resources?

YES _____ NO _____

(11.1) If **YES** please **BRIEFLY** describe what is monitored (for example, soil compaction, tree damage, multiple trails, grass utilization, etc.)?

12. Any additional comments you would like to make that would be appropriate to this section?

SECTION C: TRESPASS

1. What kind of animals?

(1.1) Cattle:	YES	_____	NO	_____
(1.2) Sheep:	YES	_____	NO	_____
(1.3) Goats:	YES	_____	NO	_____
(1.4) Horses:	YES	_____	NO	_____
(1.5) Mules:	YES	_____	NO	_____
(1.6) Burros:	YES	_____	NO	_____
(1.7) Reindeer:	YES	_____	NO	_____
(1.8) Other:	_____			
(1.9) Other:	_____			

2. How frequently does trespass on "NPS property" occur every year and approximately how many animals each time?

3. What is the adjacent land ownership from which trespass occurs (private, agency, etc.)?

4. Is the NPS boundary fenced? FULLY _____ PARTIALLY _____ NONE _____

(4.1) If there is a fence, is it in good shape or needing repair?

(4.2) Who owns the fence or has responsibility to maintain it?

5. How does the park handle trespass incidents? _____

6. If trespass is frequent (less than 10 times yearly in same locality) is there a program to monitor grazing or livestock impacts on resources? YES _____ NO _____

(6.1) If **YES** please **BRIEFLY** describe what is monitored (for example, damage to cultural sites, loss of riparian vegetation cover, etc.).

7. Any additional comments you would like to make that would be appropriate to this section?

SECTION D: FERAL HORSES OR BURROS

1. If NPS management of feral or at-large herds is legislated, please cite the specific legislation, either the number of the 16 USC and/or public law.

2. What kind of animals?

(2.1) Horses: YES _____ NO _____

(2.2) Mules: YES _____ NO _____

(2.3) Burros: YES _____ NO _____

(2.4) Other: _____

(2.5) Other: _____

3. Is there a special breed that is identified with the park? YES _____ NO _____

(3.1) If **YES** please specify: _____

4. How is NPS managing the herds? _____

5. Have feral or at-large herds been eliminated from the park by NPS?
YES _____ NO _____

6. Approximately how many herds, animals per herd, and total number of animals are there?

7. What is the approximate acreage open to feral or at-large herds? _____

8. What is the total acreage of the park? _____

9. Is there an approved herd management plan?
YES _____ NO _____ IN PROGRESS _____

(9.1) If YES was environmental compliance done on the plan?
YES _____ NO _____ IN PROGRESS _____

10. Any additional comments you would like to make that would be appropriate to this section?

APPENDIX 8- Identifying Foot-and-Mouth Disease

Introduction

Foot-and-mouth disease (FMD) is a highly contagious viral disease of domestic cloven-hoofed animals that may also affect wildlife. While most domestic cloven-hoofed animals exhibit similar clinical signs of the disease, species-specific variation can occur and little is known about the clinical response of North American wildlife species to FMD.

Clinical Signs

Clinical signs and lesions are not specific to FMD. Trauma or other diseases (vesicular stomatitis, epizootic hemorrhagic disease, bluetongue) can cause similar lesions. Secondary bacterial infections can change the appearance of FMD lesions or there is a possibility that no lesions at all may be present. Confirmation of diagnosis is based on laboratory testing of collected samples from suspect animals.

Because of the variability in clinical presentation, park staff is encouraged to make the best field assessment possible and call expert assistance as needed. The most classic clinical signs and lesions of FMD for domestic livestock are described below.

Acute clinical signs in domestic livestock that may be noted in live animals:

1. Lameness
 - a. “Walking on eggs” – arched back, head held low (except newborns)
 - b. Limping or lack of use of a limb
 - c. Licking or shaking of the feet
 - d. Reluctance to rise or run
2. Excessive salivation
3. Fuzzy appearance, especially on the face, due to fever

Lesions that may be observed on examination:

1. Vesicles (blisters) or ulcerations in the mouth (tongue, lips, palate) or nose.
2. Vesicles or ulcerations on the feet around or between the hooves.
3. A break or fault in the hoof wall as it grows out.

Species Susceptibility

Species	Susceptible	Concerns
Humans	No	In very rare cases human infection has occurred. Humans can spread the disease on the body, clothing, shoes, or gear.
Domestic Sheep	Yes	Act as the maintenance host. In sheep the lesions can be mild and difficult to detect, however, the animal is contagious to other animals.
Pigs	Yes	Act as amplifiers of FMD virus. Pigs produce 30 to 100 times more virus in aerosol than do sheep or cattle.
Cattle	Yes	Cattle act as the indicator species. Clinical signs develop more rapidly and are more severe than lesions in sheep, goats, or pigs.
Goats	Yes	
Llamas	Yes	
Horses, mules, burros	No	Resistant to FMD, however, they can spread the virus on their body or particularly in organic material on their hooves.
Wildlife Cloven-hoofed animals	Likely	Potentially susceptible species: Deer, elk, moose, caribou, bighorn sheep, mountain goats, bison, pronghorn antelope, javelina, feral pigs, exotic deer species
Birds	No	Birds are not susceptible to FMD but can mechanically transmit the virus on their beaks or feathers. This is of particular concern with birds that form large flocks around agricultural areas.

GLOSSARY

This glossary contains simple explanations of terms, as they can be understood in the context of the foot-and-mouth disease Prevention and Response Plans.

Amplifier – An animal that when infected produces large quantities of FMD virus. Virus can be spread by direct or indirect transmission routes, including aerosol. Pigs are FMD virus amplifiers.

APHIS - Animal and Plant Health Inspection Service, part of USDA.

AVIC – Area Veterinarian-in-Charge. The lead veterinarian for USDA APHIS in a particular geographical area; there are 42 areas nationwide.

BRD – Biological Resources Division. A division of the U.S. Geological Survey based in Reston, VA but including the Wildlife Health Center in Madison, WI.

BRMD – Biological Resource Management Division. A new division of the National Park Service, part of the Natural Resource Program Center, based in Fort Collins, CO.

Cloven-hoofed animal – Ungulate with split toes.

Carrier animal – An animal that is not showing clinical signs of the disease, but does harbor the FMD virus. No North American wildlife species are known carriers. Sheep and cattle can carry FMDV for 6 and 24 months respectively.

Disinfectant – A chemical or mechanical means of rendering the virus unviable. For FMD, bleach and vinegar work at appropriate concentrations. Ammonia and phenol do not. See appendix for Disinfectant Details.

FADD – Foreign animal disease diagnostician. A veterinarian that has been through the foreign animal disease training course at Plum Island and receives continuing education in animal health emergency management. There are about 260 FADDs nationwide.

FMD – Foot-and mouth disease. FMD is a highly contagious viral infection of cloven-hoofed domestic and wild animals. The disease is caused by an aphthovirus and characterized by vesicles, with subsequent erosions in the mouth and feet, and sometimes also in the nose, muzzle, feet, or teats.

FMD Coordinator – A person designated in each NPS Unit to evaluate the vulnerability of the unit to an FMD outbreak, and to be aware of the NPS Preparation and Response Plans for the disease.

FMD Regional Coordinator – a person appointed by the NPS Regional Director to help ensure that FMD Prevention and Response Plans are coordinated between park units, the NPS Washington Office, the APHIS AVIC and the State Veterinarian.

FMDV – FMD virus. The virus that causes foot-and-mouth disease. There are at least seven strains of the virus. The current strain in the United Kingdom and other countries in western Europe is Type O.

Incident Management Team (IMT) – The team has authority delegated by the Agency Administrator to take necessary actions to respond to a specific emergency.

Incident – An occurrence or event, either human-caused or natural phenomena that require action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources. An FMD outbreak that affected NPS units would be handled as an incident.

Incident Action Plan (IAP) – The incident action plan, which is usually prepared at the first meeting, contains general control objectives reflecting the overall incident strategy, and specific action plans for the next operation period (yep, incidents are divided into operational periods). The FMD Response Plan includes an IAP.

Incident Commander – The individual responsible for all incident operations.

Incident Command System (ICS) – The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility for the management of assigned resources to effectively accomplish stated objective pertaining to an incident.

Hand-foot-and-mouth disease – a common human childhood illness, this ailment is caused by a coxsackievirus and should not be confused with foot-and mouth disease of ungulates. In many people, infection with hand-foot-and-mouth disease causes no symptoms. In others, infection may result in blisters in the mouth, on the gums and tongue, on the palms and fingers or on the soles of the feet.

Hoof and mouth disease - An earlier, regional name for foot-and-mouth disease. While synonymous, foot-and-mouth is now the accepted term for the disease and FMD is the accepted acronym.

Mechanical transmission – Movement of a virus by inanimate object or by an organism that has not contracted the disease (i.e. car tires and horse hooves respectively).

State Veterinarian – State official that is responsible for livestock disease control to ensure compliance with federal and state laws

Serological test – Laboratory analysis performed on the serum fraction of a blood sample to detect exposure to a disease.

Targeted disease surveillance – Monitoring for clinical signs consistent with a particular disease such as FMD.

T&E Species – Threatened and endangered species as designated by listing under the provisions of the Endangered Species Act.

Ungulate – A hoofed mammal.

USDA – United States Department of Agriculture. The designated lead department of the federal government in a foreign animal disease outbreak. APHIS is a part of the Department of Agriculture.

Vesicle – A blister. A small sac containing liquid (serum) or gas.

Vesicular stomatitis – A disease that occurs in ungulates that shares many of the clinical signs of FMD, but is not FMD. One reason why if you see an animal with signs of FMD, you should contact an expert, such as an FADD.

Veterinary Medical Officer (VMO) – Local veterinarian that works for APHIS, but does not necessarily have training in foreign disease diagnosis.

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